

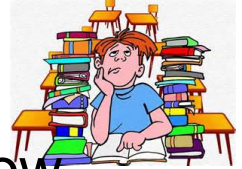
WARM UP GRADE 8

Name: _____

~~Wednesday Sept 12~~ Sept. 23

Section 2.5 Order of Operations with Integers

Similar to Warmup quiz on Tomorrow



Answer the following . (No Calculators)

- 1) $(-10) \times (-3) = +30$ 2) $(-36) \div (+6) = -6$ 3) $(-10) \times (+2) = -20$ 4) $(+34) + (-3) = +31$
 5) $(-60) \div (+5) = -12$ 6) $(-17) - (-4) = -13$ 7) $(-21) + (-7) = -28$ 8) $(+24) \div (-3) = -8$
 9) $(+20) + (-11) = +9$ 10) $(-23) + (-1) = -24$ 11) $(+4) \times (-5) = -20$ 12) $(+15) - (-1) = +16$

$$(+15) \downarrow + (+1)$$

Show work (Do the question in steps...not just the final answer)

$13) (+18) - (-2) + (+4)$ $= (+18) + (+2) + (+4)$ $= (+20) + (+4)$ $= +24$	}	$14) (-20) + (-3) - (+5)$ $= (-23) - (+5)$ $= (-23) + (-5)$ $= -28$
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Sheet 283

Homework Solutions

$$\begin{aligned} 1a) & (+5) - (+2) \\ & = +5 + (-2) \\ & = +3 \end{aligned}$$

$$\begin{aligned} b) & (-3) - (+6) \\ & (-3) + (-6) \\ & = -9 \end{aligned}$$

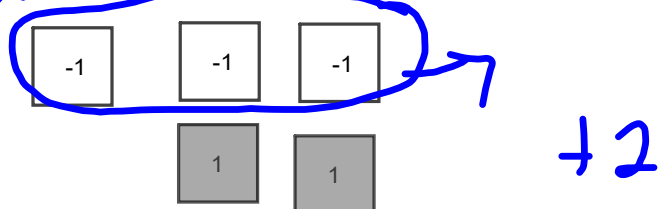
$$\begin{aligned} c) & (-6) - (+5) \\ & (-6) + (-5) \\ & = -11 \end{aligned}$$

$$\begin{aligned} d) & (-7) - (-1) \\ & (-7) + (+1) \\ & = -6 \end{aligned}$$

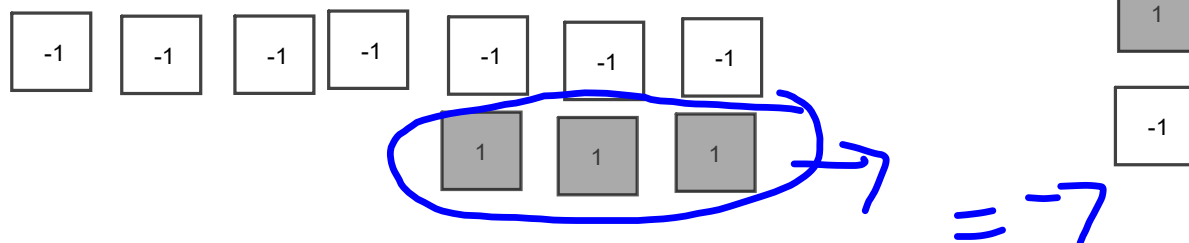
$$\begin{aligned} e) & (+3) - (+8) \\ & (+3) + (-8) \\ & = -5 \end{aligned}$$

$$\begin{aligned} f) & (+7) - (-9) \\ & (+7) + (+9) \\ & = +16 \end{aligned}$$

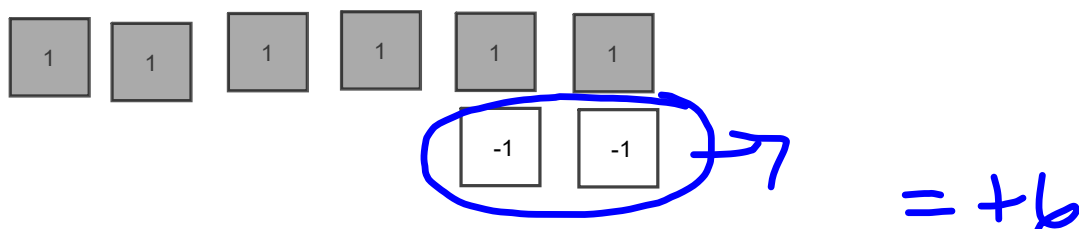
$$2 a) (-1) - (-3)$$



$$b) (-4) - (+3)$$

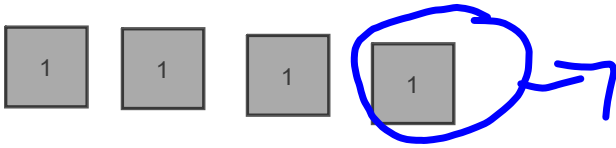


$$c) (+4) - (-2)$$



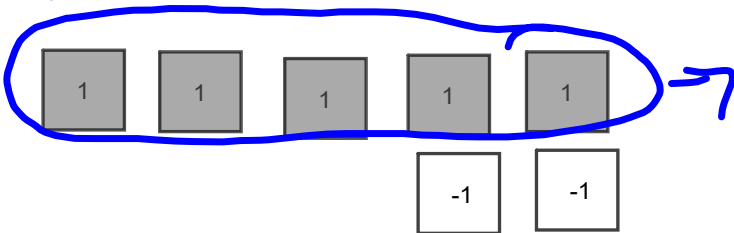
Homework Solutions

d) $(+4) - (+1)$



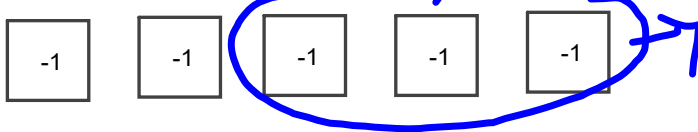
$+3$

e) $(+3) - (+5)$



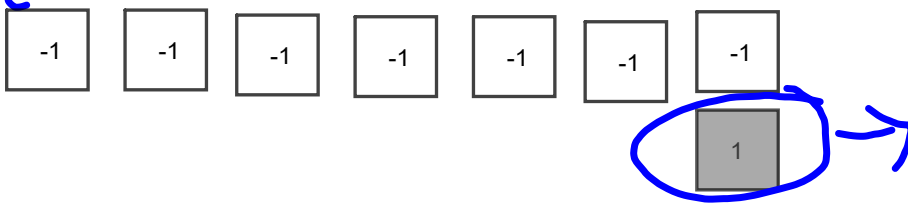
$= -2$

f) $(-5) - (-3)$



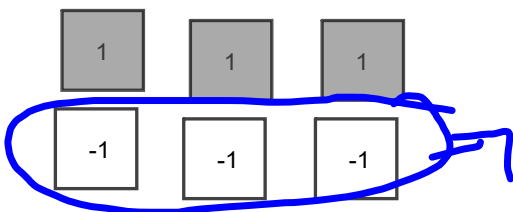
$= -2$

g) $(-6) - (+1)$



$= -7$

h) $0 - (-3)$



$= +3$

$$3a) (+5) - (+4) \\ = +1$$

$$c) (-7) - (-1) \\ (-7) + (+1) \\ -6$$

$$e) (-3) - (+8) \\ (-3) + (-8) \\ -11$$

$$g) 0 - (+2) \\ 0 + (-2) \\ = -2$$

$$i) (+6) - (-6) \\ (+6) + (+6) \\ +12$$

Homework Solutions

$$b) (+6) - (-8) \\ (+6) + (+8) \\ +14$$

$$d) (+4) - (-7) \\ (+4) + (+7) \\ +11$$

$$f) (+5) - (-7) \\ (+5) + (+7) \\ +12$$

$$h) (-20) - (-11) \\ -20 + (+11) \\ -9$$

$$j) (-8) - (+8) \\ -8 + (-8) \\ -16$$

$$4. \begin{array}{l} (+2) - (-2) \\ (+2) + (+2) \\ +23 \end{array}$$

Homework Solutions

The temperature increased 23°

$$5a) \begin{array}{l} (-2) - (+3) \\ (-2) + (-3) \\ -5 \end{array}$$

$$\begin{array}{l} (+3) - (-2) \\ (+3) + (+2) \\ +5 \end{array}$$

$$b) \begin{array}{l} (-5) - (-3) \\ (-5) + (+3) \\ -2 \end{array}$$

$$\begin{array}{l} (-3) - (-5) \\ (-3) + (+5) \\ +2 \end{array}$$

Order is important when subtracting.

Homework Solutions

$$\begin{aligned} \text{b a)} & (-5) - (-1) - (+3) \\ & (-5) + (+1) + (-3) \\ & = -7 \end{aligned}$$

$$\begin{aligned} \text{b)} & (-4) - (-6) - (-1) \\ & -4 + (+6) + (+1) \\ & +3 \end{aligned}$$

$$\begin{aligned} \text{c)} & (-5) - (+8) - (+6) \\ & (-5) + (-8) + (-6) \\ & -19 \end{aligned}$$

$$\begin{aligned} \text{d)} & (+10) - (+3) - (-7) \\ & +7 + (+7) \\ & +14 \end{aligned}$$

$$\begin{aligned} \text{e)} & (-2) - (-8) - (+4) \\ & (-2) + (+8) + (-4) \\ & +2 \end{aligned}$$

$$\begin{aligned} \text{f)} & (-3) - (-3) - (-7) \\ & 0 + (+7) \\ & +7 \end{aligned}$$

$$\begin{aligned} \text{g)} & (+4) - (-1) - (-5) \\ & (+4) + (+1) + (+5) \\ & +10 \end{aligned}$$

$$\begin{aligned} \text{h)} & (-3) - (-4) - (+5) \\ & (-3) + (+4) + (-5) \\ & -4 \end{aligned}$$

Order of Operations

We have already learned that you can add or multiply in any order, but that order matters with subtraction and division. Therefore, **if you have a question that contains more than one operation, the order in which you answer the question is very important.**

There is a set of rules to follow. Often students remember the order, by **remembering the word ~~B~~EDMAS**. That is, first you solve anything that is inside the brackets. Next, you simplify any exponents. Then, do all the multiplication and division in the question, in the order it occurs from left to right. Finally, you do the addition and subtraction in the order it occurs from left to right.

B - Brackets

E - Exponents

**D } Division and Multiplication, in the order
M } it occurs from left to right.**

**A } Addition and Subtraction, in the order it
S } occurs from left to right.**

Examples: **BADMAS**

$$\begin{aligned} \text{a) } & 6 - 2 \times 4 \\ & = 6 - 8 \Rightarrow (+6) + (-8) \\ & = -2 \end{aligned}$$

$$\begin{aligned} \text{c) } & 9 \times 3 - 4 \times 5 \\ & = 27 - 20 \\ & = 7 \end{aligned}$$

$$\begin{aligned} \text{e) } & 5 \times 5 - (8 - 2 \times 3) \\ & = 5 \times 5 - (8 - 6) \\ & = 5 \times 5 - (2) \\ & = 25 - 2 \\ & = 23 \end{aligned}$$

$$\begin{aligned} \text{g) } & 6 - 4 \times 4 \div 8 \times (2 + 1) \\ & = 6 - 4 \times 4 \div 8 \times (3) \\ & = 6 - 16 \div 8 \times (3) \\ & = 6 - 2 \times 3 \\ & = 6 - 6 \\ & = 0 \end{aligned}$$

$$\begin{aligned} \text{b) } & 4 \times 4 + 2 - 8 \div 4 \\ & = 16 + 2 - 8 \div 4 \\ & = 16 + 2 - 2 \\ & = 16 \end{aligned}$$

$$\begin{aligned} \text{d) } & 6 \times 8 \div 4 \times 3 \\ & = 48 \div 4 \times 3 \\ & = 12 \times 3 \\ & = 36 \end{aligned}$$

$$\begin{aligned} \text{f) } & 2 + 8 \times 4 - (9 + 1) \\ & = 2 + 8 \times 4 - 10 \\ & = 2 + 32 - 10 \\ & = 34 - 10 \\ & = 24 \end{aligned}$$

$$\begin{aligned} \text{h) } & 4 \times 5 \times 5 - [8 - (-3)(+5)] \\ & = 4 \times 5 \times 5 - [8 - (-15)] \\ & = 4 \times 5 \times 5 - [8 + (+15)] \\ & = 4 \times 5 \times 5 - (+23) \\ & = 20 \times 5 - (+23) \\ & = 100 - (+23) \\ & = +77 \end{aligned}$$

Example:

$$\frac{[16 - (-4)] \times (-3)}{3(-2)}$$

Top
Bottom

Hint: Evaluate Numerator and Denominator separately

Step 1) Do top Separately

Step 2) Do Bottom Separately

Top

$$[16 - (-4)] \times (-3)$$

↓ ↓
Add opp

$$= [16 + (+4)] \times (-3)$$

$$= (+20) \times (-3)$$

$$= -60$$

Step 3) $\frac{\text{Top}}{\text{Bottom}} = \frac{(-60)}{(-6)}$

Bottom
= $3(-2)$
= -6

$$= \boxed{+10}$$

Examples:

$$\begin{aligned} \text{a) } & 6 - 2 \times 4 \\ & 6 - 8 \\ & 6 + (-8) = -2 \end{aligned}$$

$$\begin{aligned} \text{b) } & 4^2 + 2 - 8 \div 4 \\ & 16 + 2 - 8 \div 4 \\ & 16 + 2 - 2 \\ & 16 \end{aligned}$$

$$\begin{aligned} \text{c) } & 9 \times 3 - 4 \times 5 \\ & 27 - 20 \\ & 7 \end{aligned}$$

$$\begin{aligned} \text{d) } & 6 \times 8 \div 4 \times 3 \\ & 48 \div 4 \times 3 \\ & 12 \times 3 = 36 \end{aligned}$$

$$\begin{aligned} \text{e) } & 5^2 - (8 - 2 \times 3) \\ & 5^2 - (8 - 6) \\ & 25 - 2 \\ & 23 \end{aligned}$$

$$\begin{aligned} \text{f) } & 2 + 8 \times 4 - (9 + 1) \\ & 2 + 8 \times 4 - 10 \\ & 2 + 32 - 10 \\ & 24 \end{aligned}$$

$$\begin{aligned} \text{g) } & 6 - 4^2 \div 8 \times (2 + 1) \\ & 6 - 4^2 \div 8 \times 3 \\ & 6 - 16 \div 8 \times 3 \\ & 6 - 2 \times 3 \\ & 6 - 6 = 0 \end{aligned}$$

$$\begin{aligned} \text{h) } & 4 \times 5^2 - (8 - (-3) \times 5) \\ & 4 \times 5^2 - (8 - (-15)) \\ & 4 \times 5^2 - (8 + 15) \\ & 4 \times 25 - 23 \\ & 100 - 23 = 77 \end{aligned}$$

Class/Homework

Add

$$\frac{(-) + (-)}{(-) + (-)} = -$$

X or ÷

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add

$$(+) + (+) = +$$

Same

$$\begin{matrix} (+)(+) = + \\ (-)(-) = + \end{matrix}$$

~~7~~ MUST SHOW WORK

(diff)

$$(-) + (+) = \text{(diff)}$$

Diff

$$(+) (-) = -$$

Test friday

- #3 (Show work Probably Sept. 27
Work it out)
- #5
- #7